

## TED03 – (Part E5) Dissolved Oxygen in Water

Name \_\_\_\_\_

1. E.5.1 **Outline** biochemical oxygen demand (BOD) as a measure of oxygen demanding wastes in water. (2)
  - a. Provide the definition for Biological Oxygen Demand (BOD)
  - b. Discuss solubility of oxygen in water and its importance on fish life: (use values for Temp and ppm)
  - c. Organic materials will natural decay by action of microorganisms and in the process use up the dissolved oxygen, hence **BOD**. Provide the equation for **aerobic decomposition**:
  - d. What are the conditions for water with small and large BOD?
2. E.5.2 **Distinguish** between aerobic and anaerobic decomposition of organic material in water. (2) *Use redox equations as appropriate.*
3. E.5.3 **Describe** the process of eutrophication and its effects. (2)
  - a. What is Eutrophication?
  - b. Why do lake environments favor fish over plant life?
  - c. Explain the production of **algal bloom** and its impact:
  - d. Explain the impacts after death of the algae:
4. E.5.4 **Describe** the source and effects of thermal pollution in water. (2)
  - a. How does the temperature of water affect the solubility of oxygen gas? How is this different than the effect of temperature on the solubility of solid compounds?
  - b. Why is oxygen concentration decreased when temperature rises in water?
  - c. What is thermal pollution, where does it come from?
  - d. How do changes in temperature affect the fish cycle?
  - e. How can thermal pollution cool the body of water?